COURSE DESCRIPTION

The major purpose of this course is to provide students with an understanding of how information systems and technology can be used to implement an organization's strategy. How information systems and technology can improve the quality of service provided to consumers and the clinical quality of health care is examined, as well as the technology selection, acquisition and implementation processes.

Issues related to organizing and managing the information services function in a health care organization are discussed, and how they are being resolved. By the end of this course, students should be able to work more productively with information systems professionals to plan, justify, select, and implement an information system. This requires both an understanding of the concepts and techniques used by information systems professionals and the ability to define what information is needed to effectively manage health services.

This course describes the growing involvement of government in stimulating and directing the development of information technology in healthcare organizations. Included is a discussion of attempts to exchange information for the purposes of improving the quality of personal healthcare and public health. Methods for determining the financial value of information technology are described. Techniques for insuring the security and privacy of health information are presented.

This course will prepare healthcare managers and clinicians to participate in the management of healthcare information technology, including the technology selection, acquisition and implementation processes.

COURSE OBJECTIVES

At the end of this course, students will be able to:  

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**COMPETENCIES**

L12. **Information Technology Management** - The ability to see the potential in and understand the use of administrative and clinical technology and decision-support tools in process and performance improvement.

L12.2 **Actively Promotes Information Systems Implementation** - Understands how information technology tools simplify, streamline and improve care, including the ability to make a cogent case for using these tools to clinical and administrative audiences

L12.3 **Champions Decision Support Systems Implementation** - Supports use of Web-based diagnostic capabilities

L12.4 **Seeks and Challenges the Organization to Use Leading-Edge and Developing Information Technology** - Stays up-to-date on the latest developments in information technology; Identifies new opportunities to use latest information technology in the organization.

L20. **Project Management** - The ability to plan, execute, and oversee a multi-year, large-scale projects involving significant resources, scope, and impact. Examples include the construction of a major building, implementation of an enterprise-wide system (patient tracking, SAP), or development of a new service line.

**REQUIRED COURSE MATERIALS**


Bound set of the readings listed below.

**OPTIONAL COURSE MATERIALS**

Two excellent reference sources for a range of healthcare IT topics are:


Roger Kropf and Guy Scalzi, *IT Governance in Hospitals and Health Systems* (Chicago: Health Information and Management Systems Society [HIMSS], 2012).

**INTERNET RESOURCES ON HEALTHCARE INFORMATION SYSTEMS**

1. HIMSS Resource Library
   [http://www.himss.org/library/topics?navItemNumber=17591](http://www.himss.org/library/topics?navItemNumber=17591)
2. HIMSS Health IT Body of Knowledge
3. Journals and newsletters:
   - *iHealthBeat* [http://www.ihealthbeat.org](http://www.ihealthbeat.org) A free daily email from
the California Health Care Foundation.  
http://www.chcf.org
3. Webopedia, an on-line dictionary for computer and Internet terms.  
http://www.webopedia.com/
5. American Medical Informatics Association http://www.amia.org/
6. CMIO Magazine is aimed at Chief Medical Information Officers in healthcare organizations. A free newsletter is available. http://www.cmiomagazine.com/
8. HIStalk offers news and commentary on the healthcare information technology industry.  
http://histalk2.com/
9. Connected Health Initiative http://www.connected-health.org
The Connected Health Initiative focuses on extending the care community beyond the traditional walls of healthcare institutions by bringing healthcare to the everyday surroundings of the health consumer and their families.
13. HIMSS, Meaningful Use OneSource http://www.himss.org/meaningfuluse?navItemNumber=13303
15. Office of the National Coordinator for Health Information Technology http://www.healthit.gov/
16. Center for Patient and Family-Centered Care, HIMSS Foundation http://www.himss.org/nehc

CIO Blogs
1. John D. Halamka, MD, MS, is Chief Information Officer of the CareGroup Health System in Boston http://geekdoctor.blogspot.com/

Wikis

COURSE OUTLINE & READING ASSIGNMENTS

January 11 Healthcare Information Systems: Vision And Priorities; Government Initiatives to Support Healthcare; IT Governance; HIPPA and Security

1. David Blumenthal, “Stimulating the Adoption of Health Information


Other Resources/Optional Reading (not in reading packet):


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**January 12**

**System Selection and Implementation**


Guest Speaker: **Steve Hess** was named CIO of University of Colorado Health in 2012. University of Colorado Health includes five hospitals and dozens of clinics throughout Colorado, Wyoming and western Nebraska. Mr. Hess was previously CIO of University of Colorado Hospital in Aurora from 2009 to 2012. Prior to that, he served as CIO of Christiana Care Health System in Wilmington, Delaware for five years.
January 13

Improving Service Quality and Patient Engagement; Improving Clinical Quality


Other Resources/Optional Reading:


Guest Speaker: Chen-Tan (C.T.) Lin, MD is Chief Medical Information Officer at the University of Colorado Health, a 5 hospital partnership spanning the Colorado Rocky Mountain Front Range, deploying inpatient and outpatient electronic records and patient centered information technologies at a health system comprising 4 community hospitals and the only academic hospital in a multi-state area. He continues to have clinical responsibilities, and also facilitates workshops on physician-patient
communication. His research interests are in patient-accessible electronic medical records, particularly those that facilitate communication and collaborative disease management, and physician adoption of information technology. He was awarded one of 9 national "Healthcare IT innovators" awards from Healthcare Informatics for 2003, and was the Allscripts "Electronic Physician of the Year" for 2008.

April 5-11  
Information and Technology As Strategic Resources; IT Governance; Information Governance


April 12-18  
Government Initiatives to Support Healthcare IT; Integrating Health Systems Through Technology: Federal and Local Initiatives


Other Resources/Optional Reading:

1. Office of the National Coordinator for Health Information Technology http://www.healthit.gov/
2. The Official Web Site for the Medicare and Medicaid Electronic Health Records (EHR) Incentive Programs http://www.cms.gov/EHRIncentivePrograms/
3. CMS Incentive Program Meaningful Use Stage 2 Website: cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Stage_2.html
5. HIMSS Health Information Exchange Resources http://himss.org/ASP/topics_rhio.asp

**April 19-25**

**HIPAA: Security And Privacy**


Other Resources/Optional Reading:

1. HIMSS Privacy/Security resource  
   http://www.himss.org/asp/topics_privacy.asp
2. HIMSS Privacy & Security Toolkit  

April 26-May 2 Assessing Value and Analytics

2. Roger Kropf and Guy Scalzi, “Are We Getting The Benefits We Wanted? Why IT Governance Should Include A “Closed Loop” Assessment of Benefits Received” JHIM (Summer, 2013). Full text available at: http://rogerkropffphd.net/index_6.htm

Additional Resources/Optional Reading (Not in reading packet):

Full-text at:  

3. HIMSS Health IT Value Suite  http://www.himss.org/valuesuite

4. OPTUM, Predictive analytics: Poised to drive population health (2014)  
Available at (registration required)  

**First assignment posted May 1**

One-page description of a service or quality problem (for the second assignment) is due on April 27

**May 3-9**  
**Improving Service Quality and Patient Engagement Through Information Technology**


**May 10-16**  
**Improving Clinical Quality Through Information Technology (Part I)**


Support: Making the Practice of Evidence-based Medicine a Reality,” *Journal of the American Medical Informatics Association* 10:6 (Nov/Dec, 2003), p. 523-530. Full-text available at: [http://www.jamia.org/cgi/content/full/10/6/5’23](http://www.jamia.org/cgi/content/full/10/6/5'23)


Additional Resources/Optional Reading (Not in reading packet):


**First assignment due May 11.**

**May 17-23 Improving Clinical Quality (Part II: Managing The Use of Drugs)**


Additional Resources/Optional Reading:

May 24-30 Managing Implementation


Additional Resources/Optional Reading:


May 26 - Submit outline of Assignment #2

May 31- June 6 Implementation Strategies; Project Management; Organizing IT Services; Outsourcing


Additional Resources/Optional Reading:


Describes what a very large data center looks like and “cloud computing”  
http://www.nytimes.com/2009/06/14/magazine/14search-t.html?_r=1&scp=1

Second assignment is due June 15.

**ASSIGNMENT DESCRIPTIONS**

There will be two major written assignments during the semester which will be completed outside of class and returned, typed double-spaced, on the date shown below. The first assignment will ask you to apply what you have learned by responding to questions posed by the CIO of a healthcare organization. The assignment is in two parts. Part one will be a memo to the CIO. Part two will be a memo to the instructor explaining how the concepts and knowledge in the course have been applied, and will include appropriate footnotes.

The second assignment will be to present a plan for using a technology to improve the quality of a health care service. Students will select a service (e.g., ambulatory pediatric services in a small group practice or hospital radiology services) and define a technology that would improve customer satisfaction, clinical quality, or both.

You will determine client needs (e.g., by interviews, observation), look at technologies on the market, and make a recommendation on which one should be considered for a purchase. You will observe at least two products in operation at two different locations similar to the client organization. Further instructions on what should be included in a plan will be provided by the instructor. Students should submit a one-page proposal describing the service and the quality objective or problem that they would like to focus on by April 27. An outline of the paper should be submitted by May 26.
GRADING POLICIES

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<th>% of Course Grade</th>
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<td>2. Second assignment</td>
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<td>3. Conferencing participation</td>
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CONFERENCING EXPECTATIONS

Learning to think in a new way is not accomplished by reading alone. It requires the student’s active participation. You should be testing your own interpretations and conclusions against those of others in the class as we go along. This is the major objective of the computer conferencing portion of the course and its importance is reflected in the weight attached to class participation in the grading policy.

In this course, the computer conferencing will take the form of discussions of issues raised in the reading assignments. I will pose questions to initiate discussion related to each block of readings, but you should not feel limited to those questions. I will consider conferencing a success only if you communicate with each other, as well as with me.

If you do not understand the readings or feel that the important issues are different from the ones I have raised, you should say so. Discussing your reactions to the readings is more important than my elaborating on the material.

You are not required to respond to every question. You will sometimes feel that your views have been well expressed by your colleagues. They may appreciate a word of support, but lengthy repetitions waste everyone’s time.

I expect each of you to make one substantive contribution to the discussion each week in addition to what your group posted. You could answer a response by someone outside of the group to what your group posted, reply to another group’s post, or make an individual contribution to the discussion. A “substantive” response could be a single paragraph, but it should be a thoughtful response to what has been said.

Messages should be a MAXIMUM of two screens long. There is no need for lengthy introduction, e.g., a summary of what is said in the readings. I suggest you state at the beginning the point you wish to make and then explain your reasoning.

For computer conferencing, you will be divided into your usual study groups. Each Friday, a question will be placed on the system for each group. Each group should post a response by Tuesday at 6pm Eastern Time. No one can respond to the question until the designated group has posted its response.
Do not be afraid to ask questions. This is your opportunity to ask a “stupid” question. If you don’t, you may face a situation in your career when you need to know the answer, but feel too uncomfortable to ask. Your conferencing responses are not answers to exam questions where questions to me or your colleagues would be inappropriate. Rather, the conferencing sessions will be, I hope, the equivalent of a lively class discussion.

[My thanks to Rich Foster for authoring most of this section.]
Roger Kropf, Ph.D.

Roger Kropf has been a Visiting Professor since 1997 at the University of Colorado Denver Business School, where he teaches in the Executive MBA Program in Health Administration. The Executive Program uses faculty from the Network for Healthcare Management, an educational collective consisting of fourteen universities across the U.S.

Dr. Kropf was also a Professor in the Health Policy and Management Program at New York University's Wagner Graduate School of Public Service from 1985-2013, where he taught courses on healthcare management information systems and management. He was a Visiting Professor in 2013 in the University Of Alabama Birmingham Executive Doctoral Program in Health Services Administration and taught a course in Strategic Information Systems.

He received his doctorate from the Maxwell School at Syracuse University. His doctoral dissertation, Information Systems in Health Maintenance Organizations: A Study of Data Collection and Analysis in Community Group-Practice HMOs, explored how HMOs collected and used information for decision making.

One of his principal interests is in helping health-care professionals to use strategic planning and management information systems to achieve their organizations' goals and objectives. This is the major subject of his book, Strategic Analysis for Hospital Management, written with James Greenberg, Ph.D. and published by Aspen Systems in 1984.

Dr. Kropf has conducted research on how computer and telecommunications systems can be used in innovative ways in the strategic management of health-care services, and in improving patient and physician satisfaction. It is the subject of his book Service Excellence in Health Care through the Use of Computers, published by the American College of Health-Care Executives in 1990.

How hospitals and health system select, manage the implementation of, and assess the value of information technology is the subject of Roger Kropf and Guy Scalzi, Making Information Technology Work: Maximizing the Benefits for Health Care Organizations (Chicago: Health Forum/AHA Press, 2007).

His latest book is Roger Kropf and Guy Scalzi, IT Governance in Hospitals and Health Systems (Chicago: Health Information and Management Systems Society [HIMSS]) published in 2012.

Dr. Kropf and Guy Scalzi write a column for each quarterly issue of the Journal of Healthcare Information Management, published by HIMSS, and available at http://rogerkropfphd.net